

Title (en)  
WIRE FORMING APPARATUS

Publication  
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Application  
**EP 89121199 A 19891116**

Priority  
DE 3915784 A 19890513

Abstract (en)  
[origin: EP0397918A2] The invention relates to a wire-forming apparatus, namely a winding and bending machine for leg springs. <??>The prior art is formed by apparatuses having a plurality of tools for bending wire, which is fed in a straight line, the bending tools surrounding the wire path, and by spring-winding machines having a rotatable mandrel for winding up the wire, the wire ends of the spring being shaped by means of bending tools. <??>The disadvantage of these apparatuses is their structural complexity and limitation to the production of particular spring shapes. A different spring thus requires different tools. <??>The object of the invention is therefore to reduce the expenditure required for the production of the apparatus and to generalise the shaping operations which can be carried out with the same tools. <??>The solution to this object is the arrangement of a plurality of tools (86, 88, 90, 92 or 142; 162, 190, 192) on one tool holder (74; 160), which is secured on the free end of a longitudinally displaceable shaft (12) similar to the known mandrel and can be exchanged. By rotational and longitudinal positioning of the shaft by means of its drive, known from the mandrel but controlled in a different manner, each tool present can be moved into the path of the wire and hence brought into use. <??>The advantage of this solution is the simplification of the structure of the apparatus and the possibility of producing different spring shapes by means of the same tools. <IMAGE>

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Citation (search report)  
• [A] US 4416135 A 19831122 - RUSSELL FRANK S [US]  
• [A] US 2101982 A 19371214 - CARLBERG RAYMOND F  
• [T] US 4893491 A 19900116 - OHDAI YOZO [JP], et al  
• [A] PATENT ABSTRACTS OF JAPAN vol. 12, no. 269 (M-723)(3116) 27 Juli 1988, & JP-A-63 52724 (ASAHI SEIKI KOGYO KK) 05 März 1988,

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